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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/844,216	04/30/2001	Jon C.R. Bennett	19282-025	1422

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EXAMINER	
WONG, BLANCHE	
ART UNIT	**PAPER NUMBER**
2667	

DATE MAILED: 05/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/844,216	BENNETT, JON C.R.	
	Examiner	Art Unit	
	Blanche Wong	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *21 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-51* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *25,26,28-43 and 45-51* is/are allowed.

6)☒ Claim(s) *1-4 and 6-8* is/are rejected.

7)☒ Claim(s) *9-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *03 January 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. **Claims 1 and 2** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With regard to cl. 1, it is unclear which level of the hierarchy does "each queue group component" in ln. 12 belong. Each level of hierarchy has queue group components. Therefore, "each queue group component" in ln. 12 can refer to either first or second level of the hierarchy, or both.

With regard to cl. 2, it is unclear what is referred to as "the two logically-lowest levels" in ln. 5.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-4,6** are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Caldara et al. (U.S. Pat No. 5,872,769).

With regard to cl. 1, Caldara discloses

an input 20, col. 4, ln. 30 (input ports) configured to receive packets of data,

a memory 26, col. 4, ln. 52 (input buffers) coupled to the input (each of the input ports includes input buffers),

an output 22, col. 4, ln. 31 (output ports) coupled to the memory and configured to transfer packets of data from the memory (see Fig. 2); and

a controller 14, col. 4, ln. 34 (TSPP; control signals are transmitted from a TSPP14, col. 5, ln. 3) coupled to the memory and configured to control the memory to store packets of data in queues (the buffers are queues, col. 53-54) associated with a hierarchy (QoS, col. 6, ln. 5) in which a first level of the hierarchy ("list of lists" technique, col. 7, ln. 50; see structure presented in Fig. 5;) includes a group of queue group components (entries in the lists), wherein at least one of the queue group components in the group at the first level includes a group of queue group components ("list of lists"), wherein at least one of the queue group components in the group at the first level includes (Each scheduling list in the structure has a pointer to the next scheduling list in the same structure, col. 7, ln. 64-65) a group of queue group components associated with a second (next list) level of the hierarchy that is different from the first level of the hierarchy;

wherein each queue group components is associated with at least one of a logically-lower (next list) queue and a logically-lower (pointer points to an entry in the next list) queue group, and wherein the controller (TSPP) is configured to determine (preassigned or dynamically assigned, col. 6, ln. 33-34, where to transfer the cells to output buffers) a discard (output) priority, of at least one of the queue group components in the group of queue group components at the first level, for packet discard (output) selection.

With regard to cl. 2, Caldara further discloses wherein the controller is configured to control (each input port includes a TSPP 14, col. 4, ln. 33-34; control signals are transmitted from a TSPP 14, col. 5, ln. 3) the memory to store packets of data in N levels of the hierarchy, wherein N is greater than two (Fig. 5 shows more than one list) and wherein at least one queue group component in each level other than the two logically-lowest levels includes at least two (each list has more than one entry) queue group components associated with a logically-lower (next list) level.

With regard to cl. 3, Caldara further discloses at least two queue group components associated with a logically-lower (next) level are associated with a level immediately logically lower (next) in the hierarchy. (See also Fig. 5)

With regard to cl. 4, Caldara further discloses the controller is configured to control the memory to store multiple groups ("list of lists") of queue group components (entries of lists) in associated with the first level of the hierarchy (DYN B/W Lists in Fig. 5).

With regard to cl. 6, Caldara further discloses the controller is configured to determine the discard priority based on service requirements associated with a queue (the queues preserve cell ordering and guarantees quality of service, col. 6, ln. 4-5).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over Caldara in view of Silberschatz et al. (U.S. Pat No. 6,556,578).

With regard to cl. 7 and 8, Caldara discloses the system of claim 1. However, Caldara fails to explicitly show a discard value and one that varies directly with queue size.

In an analogous art, Silberschatz discloses managing queues based on each queue's local threshold value and queue size; col. 3, ln. 52.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a discard value based on queue size such as taught in Silberschatz. The suggestion/motivation for doing so would have been to provide an early signaling mechanism for adaptive flows. Silberschatz, col. 2, ln. 38-47. Therefore, it would have been obvious to combine Silberschatz with Caldara for the benefit of a packet drop algorithm to obtain the invention as specified in cl. 7 and 8.

Allowable Subject Matter

7. **Claims 25,26,28-34 and 42,43,45-51** are allowed.

8. **Claims 9-24** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Blanche Wong whose telephone number is 571-272-

3177. The examiner can normally be reached on Monday through Friday, 830am to 530pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi H Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BW
May 18, 2005

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